A LETTER

Concerning some

OBSERVATIONS

Lately made at

BATHE.

Written to his much honoured Friend Sir *E. G.* Knight and Baronet, *M. D.* in *London.*

By THOMAS GUIDOTT, *M. B.*

Facilius ducimur, quàm trahimur. Senec.

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BRITISH
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A

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Honoured Sir,

I Know you (as well as other Ingenious and Inquiſitive Perſons) are ſomewhat concern'd, and deſirous to underſtand what Succeſs my late Enquiries have had into one of the Grand Myſteries of Nature, I mean the BATHES of this City: conſidering eſpecially that You were pleaſed the laſt Summer to afford me the Honour of your Company and particular Acquaintance, and to expreſs a

more than ordinary desire of my proceeding in this Thing. Concerning which I must tell you, that as I have not been wanting, either to Pains or Pay, in my Proceedings hitherto; so I have had the good Hap (which hath been my Encouragement) to meet with many considerable Discoveries. And though the main Body of the Matter, collected touching this Affair, be not yet ripe for the Launcet, but will require a longer time to digest; yet some Observations I shall now communicate which will give a little satisfaction to an earnest desire, and make, in some measure, appear that we have been lame and defective hitherto in a rational Account and true Understanding of the Nature of these Waters.

It hath been indeed the ill fortune of these Bathes (which I may truly say are as good if not better than any Bathes in the world) to lie a long time in obscurity, and not so much as to be mentioned among the Bathes of *Europe* by any forreign Writer, till about the year 1570. when that Excellent Person Sir *Edward Carne*, sent Ambassadour by Queen *Elizabeth* to Pope *Julius* the Third, and *Paul* the Fourth, made some Relation of them to that famous Writer *Andreas Baccius*, then at *Rome*; and writing his elaborate Book *de Thermis*, into which he hath inserted them, upon his Relation, *Lib. 4. Cap.* 13. though somewhat improperly; among Sulphurous Bathes.

About the same time also one *John Jones*, an honest *Cambro-Britain*, frequenting the Bathes for Practise, composed a little Treatise of them, which he calls *Bathes Aid*, in which are some things not contemptible, though in a plain Countrey dress, and which might satisfie and gratifie the Appetite of those times, which fed more heartily and healthily too then, upon Parsons Fare, good Beef and Bag-Pudding, than we do now upon Kickshaws and Haut-gusts; yet nothing of the true Nature is there discovered, only, as almost in all former Writers of Bathes, chiefly Catholick, a strong Stanch of Sulphur, and a great ado about a Subterranean Fire, a fit resemblance of Hell, at least of Purgatory.

Our

Our Countrey-man Doctor *William Turner* I confeſs was more particularly concern'd to give a better account, then I find is done in his Diſcourſe of Engliſh, German, and Italian Bathes. But whether want of opportunity, or any other impediment was in cauſe, I know not; But I find that at this ſtay they ſtood till the Famous Doctor *Jorden* took Pen in Hand, about the Year 1630. To whom I thought fit to make ſome Additions, at my firſt entrance on this Place, ſome five Years ſince, and although that Learned and Candid Phyſitian had chiefly and more eſpecially an intent to enlarge the Knowledge of our Bathes in *Somerſet-ſhire*, as he declares to my Lord *Cottington*, in his Dedicatory Epiſtle; and hath performed more then any Man before him; yet what was firſt in Intention, was laſt in Execution, and how ſmall a part of that Treatiſe is ſpent upon this Subject, how ſhort he is in ſome Material Points, and what Objections may be framed againſt his Opinion, I may ſometime or other, with due Reſpect, more largely treat off, and for the preſent ſhall here, with good *Sem* and *Japhet* caſt a Garment over the Nakedneſs of this my Father.

What hath been done ſince (except in ſome particular pieces of other Tracts, to the Authors of which the Bathes are alſo indebted for their kindneſs and good will) is not worth the mentioning. The old ſaying's true, little Dogs muſt piſs, and what is writ upon an Ale-bench claims the greater affinity to the Pipe and the Candle; eſpecially if the beſt Wine at the Feaſt (which is uſually kept till laſt) be but a ſilly ſtory of *Tom Coriat*, and an old *Taunton* Ballad new vampt (The Creatur's parts lying that way) abuſing the dead Ghoſts of *Ludhudibras* and *Bladud*, with a Nonſenſico-Pragmatical, Anticruzado-Orientado-Rhodomontado-Untruth-Le Grand, which we Weſterly Moderns, call a grote Lye, in to the Bargain, A pretty Artifice in Rhetorick, to cry a thing up, and beſmere, and *ſhed plentifully* on the Founder *Ordure*, *both Humane and Belluine.*

N. B.

Rode Caper, vitem, tamen hic cùm ſtabis ad aras
In tua quod fundi cornua poſſit, erit.

Goat, Barke the Vine; yet juice enough will riſe
To dreanch thy Head, when made a Sacrifice.

I have Induſtriouſly omitted Doctor *Johnſon*, Doctor *Venner* and ſome others, in regard it would be improper here to Write more Hiſtorically which I reſolve to do if my leiſure permit, on another occaſion. I ſhall therefore now let you know not ſo much what hath been done by others, as what further diſcoveries have been made by my endeavours, aſſiſted by the careful Pains of Mr. *Henry Moor* an expert Apothecary and Chymiſt of this City.

And here at firſt I cannot but take notice how that opinion hath ſo much prevailed as to be accounted Orthodox, and not only received by Tradition as certain but Printed as ſuch, that the Body of the Waters is ſo Jejune and empty, as to afford little or nothing at all whereby to make a diſcovery of its Nature, and that what impregnates the Bathes is not Subſtantially, Materially or Corporally there, but potentially, virtually and formally, or to uſe the Authors own words, δυνάμει μᾶλλον ἢ ἐνεργείᾳ with much more canting after this manner in a ſmall diſcourſe in Latin written by an Itinerant Exotick; when as a ſlight operation will ſoon evince it, though white and tranſparent of it ſelf, being taken immediately from the Pump, to contain a conſiderable quantity of a Dusky, Gritty, and Saline Matter, with many tranſparent Particles intermixed with it, to the proportion, (as near as I can calculate, ſometimes more and ſometimes leſs) of two drams to a gallon of the Water. And this I can aſcertain, having had ſeveral ounces of it done in Earth, Iron, Bell-mettle, and Glaſs, and have at this time three or four ounces by me, untoucht, beſide what I have made uſe of in other experiments.

Car. Claromont. de Aer. Aq: & Loc: T. A. pag. 32.

But

But the thing I ſhall more Peculiarly inſiſt on, at this preſent, is, That by Gods bleſſing, on my Induſtrious Search, I ſuppoſe I have lighted on the main Conſtituent, of the Vertues of the Bath, in which alone reſides what benefit can be expected from the uſe of theſe Waters, and lodgeth in a Saline ſubſtance, in a very ſmall proportion to the Body of the Waters, ſo that as they are now, not much more then fourty grains is contained in a Gallon, in ſo much that this little Soul, as I may ſo term it, is almoſt loſt in ſo Gigantick a Body, and cannot animate it with that vigour, and activity as may be rationally expected, were a greater quantity of the Salt contained in a leſs proportion of the Water. The Remainder, which is not Saline, being as I judg, two Parts of Three of the Bulk of the contents, is partly Whitiſh, Gritty, and of a Lapideous Nature, concreting of it ſelf, into a ſtony conſiſtence not eaſily diſſolvable; partly more Light, and Dirty, reſembling Clay, or Marle, and diſcovers it ſelf by an apparent ſeparation from the Saline and Gritty part mentioned before.

Now the chief Vertue of the Bath as I conceive conſiſting in the Salts, which appear by undeniable Experiments, to be Nitrous, and I believe Vitrioline (Bitumen and Sulphur being not Primarily, as theſe Salts, but Secondarily concern'd, which conſiſting of Unctuous Particles, cannot be ſuppoſed capable of mixing with the Body of the Waters, and therefore no way obſervable in the Contents) and no ſmall proportion of other things blended with it, the beſt way to make it moſt ſerviceable I conceived to be; to free it from thoſe incumbrances and allays it hath from the other Ingredients, and prepare it as exactly as may be performed by Art, for the benefit of thoſe eſpecially who are willing to Drink the Waters with greater ſucceſs in a leſſer quantity; which they may now do, and have more of the vertue of the Waters, in a quart, three pints, or a pottle, then they formerly had in two or three Gallons, did they drink as much; which will be beſides other Conveniencies, a great relief to the Stomach,

which.

which certainly muſt be relaxed, and the Tone of it injured by that vaſt quantity of Water which is uſually taken diluting its ferment overmuch, and diſtending its Membranes beyond all the bounds of a reaſonable Capacity.

Beſides, what is ſeparated only by an artificial Extraction will better unite again, and mix with the Waters, as much more familiar, than the extraneous Salts of *Sal Prunella*, Cream of Tartar, *&c.* which are uſually diſſolved and drunk with the Waters; ſo that a great part of the Operation may be aſcribed to that; and the Waters being, as we ſay, between two Stools, that of it ſelf, and the diſſolvent in it, hath not attained to that degree of Reputation as they have deſerved, and may be procured with much more advantage, if nothing but the ſame be ſpent upon the ſame, a way of Improvement altogether equally beneficial to Fluids and Solids, to the wet as to the dry.

Again, whereas it is a cuſtom here as in all other places of the like Nature, when Perſons are not willing, or have not conveniences to come to the Fountain Head, to ſend for the Waters to the places of their Reſidence, not thinking much material whether *Mahomet* go to the Mountain, or the Mountain come to him, whereby the Virtue of the Waters is much impaired, though ſtopped and ſealed up with never ſo much care; this defect may be ſupplyed by the addition of a Quantity of the ſame Ingredients, which may repair the loſs that hath been ſuſtained by Evaporation in the Carriage, or other way of dammage, and reſtore it again, as near as may be, to its priſtine Virtue, and genuine advantage. Not to mention that if need require, and the poorer ſort cannot procure or pay the Fraight for the Waters, they may take a ſhorter courſe, by mixing the Salt, which they may have at reaſonable Rates, with Spring Water, brought to a proportionable degree of heat at home, and expect more advantage, for ought I know, than thoſe that drink the Waters themſelves

ſelves at ſo great a diſtance; I have therefore ordered convenient Doſes of the Salt to be prepared and kept, by Mr. *William Child* Alderman, and Mr. *Henry Moore*, two Apothecaries in *Bathe*, to whom any one may reſort that ſhall have occaſion.

And becauſe I am now fallen on this Subject I ſhall crave leave to remind you of what you well enough underſtand already, that not only *Dulcius* but *Utilius ex ipſo Fonte, &c.* and Waters eſpecially impregnated with volatile Spirits, ſuch as moſt acid are, and peculiarly Vitrioline, to avoid the inconvenience and expence, not ſo much of Money as Virtue, in the Carriage, muſt be drunk on the place where they are, which in ſome kind reſembling Children, that muſt live by ſucking, if once removed from their Mother, or Nurſe, by degrees dwindle away, and at laſt die.

It is obſervable in theſe VVaters, that with four Grains of Galls injected into a Pint Glaſs of VVater, or the VVater poured on it, it immediately turns of a purple Colour, which in ſhort time after, as the VVater cools, abates much of its vividity, and becomes more faint: if the VVaters be ſuffered to cool, and be quite cold before the Galls are injected, no alteration happens upon a much greater proportion of Galls ſuperadded, and what is more remarkable: if the VVater, which is permitted to cool, be recruited by the Fire, and the ſame Tryal reiterated, it offers no greater ſatisfaction in change of Colour, than the ſecond Experiment. Conſonant to what *Andreas Baccius*, a Veterane and experienced Souldier in this Militia, hath formerly obſerv'd, who in his ſecond Book *de Thermis*, *Cap.* 10. *Pag.* 69, hath theſe words, *Nulla Balnei Aqua, eodem cum ſucceſſu, ac laude bibitur, longe exportata, quod ad fontem proprium maxima enim pars ex ipſo fonte hauſta ac delata, amittunt omnem virtutem, multa non ſervantur per hyemem: diluta pluviis, & quacunque ſervantur delata a propriis fonticulis, fieri non poteſt, quin amittunt, cum*

 calore

calore ſuo Minerali, vivificos illos Spiritus, in quibus omnis Juramenti vis conſiſtit, quæ ſemel amiſſa, nullo poſtea extrinſeco calore reſtituitur. Quod eſt valde notandum.

I have been the more particular in this, in regard it is a very uſeful and practical Diſcovery, and may procure more real advantage to mankind, than the vain and unattainable attempts of the Philoſophers Stone, making Glaſs malleable, and the Quadrature of a Circle.

Some other Obſervations I ſhall alſo mention, of a leſs magnitude, and more contracted Circumference, as the dying of the Bath-guides Skins, the Bathers Linnen, and the Stones in the bottom of the Bath, of a yellow colour, and the eating out of the Iron Rings of the Bath, the Iron Bars of the Windows about the Bath, and any Iron infuſed in it; in ſo much as I have now by me a Gad of Iron by accident taken up among the Stones of the Kings Bath, ſo much eaten out, and digeſted by the Oſtrich Stomach of theſe Waters, that the ſweetneſs extracted what remains reſembles very much a Honey-Comb, a deep perforation in many places being attempted, and the whole Gad it ſelf reduced to a thing very much like a Sponge.

The firſt, *viz.* the Tincture I have diſcovered to ariſe from an Ochre, with which the Bath abounds, and hath aforded me a conſiderable quantity, ſo that now I have near a Pound by me, and with an infuſion of that in warm water, tinge Stones as exactly of the Bathe colour, that they are not diſcernable one from another. It is further obſervable that the nearer the place of Ebullition, where the Springs ariſe, the deeper and finer is the Yellow colour, ſo that in ſome places, about the Croſs in the Kings Bath, and at the Head of the great Spring, at the Southweſt Corner thereof, it is almoſt made a natural Paint, being laboured together by the working of the Springs, and a continual ſucceſſion of new Matter coming

ing on, free from thoſe impurities it contracts in other places, which makes it diſtinguiſhable into two or three ſorts according to its mixture with, or freedom from, more adulterating Matter. The Clouts alſo and Woollen Rags, which the Guides uſe to ſtop the Gouts withal, beſides the Walls, Slip-doors and Poſts, when the Bath is kept in a conſiderable time, as in the Winter ſeaſon it uſeth to be, are all very much tinged with this yellow ſubſtance, and if at any time they chance to lye unwaſh'd or not thrown away, they ſend out ſo ungrateful a ſent, that a Man had rather ſmell to a Carnation, Roſe, Violet, or a Pomander, then be within the wind of ſo unwelcome a ſmell, it being the greateſt policy to get the Weather-gage in this encounter. The ſame thing I have experienced in Veſſels at home, where after it had ſtood ſome time, in a common infuſion of warm water, I have the ſame Reverence for that as Pictures, and do aver it to be true, E *Longinquo reverentia major.*

One thing more is to be noted before I leave this particular, that although ſo much of this yellow Matter is continually bred, with which the Neighbouring Ground is ſufficiently repleniſht, as I have found by digging in ſome places not far diſtant, yet nothing of that colour is diſcovered in the Contents, a probable argument it either evaporates, to which I am more inclin'd, in regard I find it much more copious where the Steam of the Bath meets with any reſiſtance, or elſe perhaps which is leſs probable, turns colour by the fire in evaporation that way; leſs probable, I ſay, becauſe for further ſatisfaction, I have decocted the Ochre more then once, and find that it rather gets then loſes in its colour.

The greeniſh colour ariſeth from another cauſe.

The eating out of the Iron I conceive muſt proceed from ſomething Corroſive, and till any one can aſſure me tis ſomething elſe, I ſhall judge it to be vitriol, and that it may ap-

pear not to be cauſed by the bare ſteam, as Ruſt is bred upon Pot-hooks and Cotterels (as ſome imagine) beſides the difficulty to conceive how the ſteam ſhould operate under Water, as in the Caſe of the Gad before mentioned, I made a Lixivium of the contents of the Water, and in it infuſed Iron, but a very ſmall time, and found it do the ſame as in the Bath it ſelf, conſidering the time of infuſion; and the very Knives, and Spatules, I put in to ſtir ſome Reſidence in the Bottom, were almoſt as ſoon as dry, cruſted over and defended with a ruſty coat.

I have other Arguments I ſuppoſe will contribute ſomething more to the confirmation of this opinion; as that with the help of the Sand of the Bath with Water, and Galls, I make good writing Ink, which in a ſhort time comes to be very legible; but the infuſion of the Contents in common water, or the Lexivium thereof, with an addition of an inconſiderable proportion of the decoction of Galls makes it tolerably legible, on the firſt commixture, only the firſt *viz.* that made with Sand, caſting an eye of decayed red from a mixture of Ochre conteined in the ſame. Neither is it altogether to be ſlighted, that the Water it ſelf hath been heretofore uſed by the beſt writing Maſters for the making of Ink, who obſerving by their experience, that Ink made with Bath water, and the other uſual Ingredients had a better Colour, and was more laſting then any other, preferred this water before any other for this uſe, as I have been informed by ſome credible perſons. Alſo having not long ſince occaſion to pour warm water on the Contents of the Bath, in order to the making a Lixivium, ſome of the water happened by an accident, to fall on a Bazil skin I ſometimes uſe, and immediately turned the Red into Black more then the bredth of an ordinary hand, with as much facility as any Curriers Liquor, Allum I know will do the like, but I find no neceſſity to aſſert, that, which had it any thing to do here, muſt make the Water much rougher, whiter and ſourer, then I find

it to be. To which I may add that many judicious perſons, my Patients, and ſome intelligent and eminent Phyſicians alſo have aſſured me that they have perfectly diſcerned by the Taſt a mixture of Vitriol, and that I need not doubt, but that was one principal Ingredient. 'Tis alſo not very inconſiderable, that the Bath water alone will coagulate Milk, though not after the uſual way of making a Poſſet; for after the Milk and Water are put together, it muſt boil pretty ſmartly, elſe the Curd will not riſe. I may likewiſe ſubjoyn as a further probability, that on the relenting of the Salt extracted into an Oyl *per deliquium*, there is a very ſharp Stiptick and Vitrioline taſt perceived in the groſs *deliquium*, as alſo in the cleer Oyl, and the Salt it ſelf; not to mention its ſhooting into glebes, of which I have ſome ſmall aſſurances; by ſome tryals I have made, not yet ſufficiently ſatisfactory, and therefore I diſmiſs this part for the preſent, with the greateſt probability, till a further inquiry ſhall make me poſitive.

But as to Nitre, there can be no queſtion made about that I ſuppoſe; for beſides the quick acrimonious cooling, and nauſeous taſt, moſt apparently diſcoverable both in the infuſed contents, the Salt and the Oil (the latter of which, *viz.* the nauſeous Taſt, I take more particular notice of, in regard it is moſt predominant, and aſſigned by *Fallopius* to Nitre, and the Waters impregnated with it, which, he ſays, ſometimes do *ſubvertere ſtomachum, & facere nauſeam, de Therm. Aq. & Met. cap.* 9. beſides, I ſay, theſe probable conjectures) what will ſet it beyond all contradiction is that it hath the true Characteriſtick of Nitre, and ſhoots in Needles, as long and firm, to the quantity I have, as any I have ſeen in the Shops, of which I have now lately ſhot above twenty *Stiriæ*, ſome near an inch in length, which I keep in a Glaſs ready by me to give any one ſatisfaction that deſires to ſee it, beſides what I have parted with to ſome friends abroad.

I the rather mention this, in regard it hath been my good hap to bring this thing to perfection and autoptical Demonſtration.

ſtration which hath been in vain attempted by ſome induſtrious perſons; not that I am, in the leaſt, willing to arrogate to my ſelf, or derogate from them, more than what is fitting, but to confirm this Truth, that there are ſome *Mollia tempora fandi*; ſome opportunities, when Nature will give willing audience, without much ceremony or ado, confeſſing more by fair perſwaſions, than racks and torments, and greater importunity. And that we ought to be very cautious how we affirm a thing not to be upon the failure of a ſingle or ſome repeated Experiments.

In fine, leſt I ſhould too much exceed the bounds of a Letter, what concerns the cauſe of the Heat of the Waters, I ſay little of here, only tell you that when I ſhall come to diſcourſe of that Subject, of which I intend, God willing, a large Diſquiſition in another Language, I believe I ſhall find my ſelf obliged not ſo much to depend on a ſubterrean Fire, as to expect greater ſatisfaction from another Hypotheſis.

Many more Experiments I have made upon the Sand, Scum and Mud of the Bath, with ſome Obſervations drawn from the *Natura Loci*, or Ground hereabouts; but, I fear, I have been too tedious already, and therefore, without further ceremony, ſhall releaſe you out of this Purgatory, with the Subſcription of,

SIR,

Your moſt Faithful and much Obliged Servant

THO. GUIDOTT.

FINIS.